

***Remarks***

Reconsideration of this Application is respectfully requested.

Upon entry of the foregoing amendment, claims 12 and 24-38 are pending in the application, with claims 12 and 31 being the independent claims. Claims 14, 15 and 23 are sought to be cancelled without prejudice to or disclaimer of the subject matter therein. New claims 30-38 are sought to be added. These changes are believed to introduce no new matter, and their entry is respectfully requested.

Based on the above amendment and the following remarks, Applicant respectfully requests that the Examiner reconsider all outstanding objections and rejections and that they be withdrawn.

***Rejections under 35 U.S.C. § 102***

Claims 12, 14, 23, 24 and 26-29 were rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 6,375,176 to Getchel et al. (herein "Getchel"). Applicant respectfully traverses this rejection.

"A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631 (Fed. Cir. 1987). To establish anticipation, every element and limitation of the claimed invention must be found in a single prior art reference, arranged as in the claim. *Karsten Mfg. Corp. v. Cleveland Golf Co.*, 242 F.3d 1376, 1383 (Fed. Cir. 2001).

Claim 12 has been amended by this amendment to essentially include the claim features of now cancelled dependent claim 14. As amended, Applicant's claim 12 now

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recites a wafer alignment system that includes an expandable annular tube configured to expand the wafer chuck without substantially expanding the wafer to reduce wafer slipping, such that an initial stress at an interface between the wafer and the wafer chuck is created, wherein the annular tube having an outer surface which is coupled to an outer edge of the wafer chuck such that the outer surface of the annular tube is substantially outside of the wafer chuck to uniformly expand the wafer chuck.

On page 2 of the Final Office Action, the Examiner equates the tube 580 of Getchel to the expandable annular tube.

Getchel does not disclose or suggest all the limitations of Applicant's claim 12. In contrast, Getchel is understood to describe a tube 580 used to circulate fluid enclosed in the housing 533 of the heat sink/heater assembly 532. See Getchel at col. 17, lines 58-65. The fluid circulating tube 580 illustrated in FIG. 11A appears to disclose an embedded structure for cooling the chuck 500. See Getchel at col. 15, lines 13-18. While in FIG. 11A of Getchel does disclose the cooling tube 580 being a groove or cavity embedded inside the material of the housing 533, Getchel is not understood to disclose an expandable annular tube having an outer surface which is coupled to an outer edge of the wafer chuck such that the outer surface of the annular tube is substantially outside of the wafer chuck. Getchel is silent with regard to the cooling tube 580 being located substantially outside of the housing 533 material. Neither FIG. 11A, nor Getchel as a whole disclose the tube cooling 580 not fully enclosed in the housing 533.

Moreover, since the cooling tube 580 is not coupled substantially outside the housing 533 the cooling tube 580 does not appear to be configured to uniformly expand the housing 533 to create an initial stress at an interface between the wafer and

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the wafer chuck. The cooling tube 580 does not appear to be coupled to the housing 533 to expand the housing 533 such that wafer slipping can be reduced. Rather, Getchel discloses the tube 580 that is capable of circulating cooling fluid so as to function as a heat sink of the heat sink/heater assembly 532.

Getchel does not, as in the present invention, provide the cooling tube 580 substantially outside of the housing 533 material as it teaches that the tube 580 is embedded deep (fully enclosed) within the cast aluminum material of the housing 533. Getchel lacks any notion of an expandable annular tube coupled to an outer edge of the wafer chuck, let alone such an expandable annular tube located substantially outside the wafer chuck, as claimed. Thus, the Applicant submits this tube 580 is clearly not an expandable annular tube of any sort that is substantially outside the wafer chuck, let alone one which uniformly expands the wafer chuck. And so Getchel does not teach or in any way suggest, as claimed, "the annular tube having an outer surface which is coupled to an outer edge of the wafer chuck such that the outer surface of the annular tube is substantially outside of the wafer chuck to uniformly expand the wafer chuck."

The Advisory Office Action argues Getchel discloses the above-noted distinguishing features. See page 2 of the Advisory Office Action. In rejecting dependent claim 14, the Examiner stated that:

"Getchel clearly shows in GIG. 11A that the annular tube 580 is coupled (e.g., connected to or joined together) to an outer edge of the wafer chuck 533 through the material of the wafer chuck 533 that is between the tube 580 and the outer edge of the wafer chuck 533"

The Examiner's rejection does not appear to address each and every feature of Applicant's claim 12 because claim 12 now recites "wherein the annular tube having an outer surface which is coupled to an outer edge of the wafer chuck *such that the outer*

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*surface of the annular tube is substantially outside of the wafer chuck to uniformly expand the wafer chuck.*” With regard to this limitation, for example, Applicant’s specification states:

[0045] “An annular tube 302 is attached to the outside of wafer chuck 204.” “Since annular tube 302 is attached to the edge of wafer chuck 204, wafer chuck 204 uniformly expands with it.”

[0008] “In one embodiment, a sealed circular tube, or annular ring, is attached to the circumference of the wafer chuck.” “In a similar embodiment, the annular ring is not attached to the edge of the wafer chuck, but is embedded inside the wafer chuck through a groove or cavity.”

[0007] “The present invention reduces wafer slipping by uniformly expanding the wafer chuck after the wafer has been attached.”

[0036] “In step 104, the wafer chuck is uniformly expanded. This creates an initial stress on the interface between the wafer and the wafer chuck.”

Further, there is no evidence, basis in fact or technical reasoning, of record that the tube 580 in col. 15, lines 13-18 and col. 17, lines 56-65 of Getchel necessarily is or becomes an expandable annular tube located substantially outside the wafer chuck in the heat sink assembly of Getchel. In other words, the Examiner has not established that the cited portions of Getchel inherently disclose or teach an expandable annular tube located substantially outside the wafer chuck. “To establish inherency, the extrinsic evidence ‘must make clear that the missing descriptive matter is necessarily present in the thing described in the reference, and that it would be so recognized by persons of ordinary skill. Inherency, however, may not be established by probabilities or possibilities. The mere fact that a certain thing may result from a given set of circumstances is not sufficient.’” *In re Robertson*, 169 F.3d 743, 745, 49 USPQ2d 1949, 1950-51 (Fed. Cir. 1999). The Examiner has presented no evidence to support that the cited portions of

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Getchel necessarily disclose or teach an expandable annular tube located substantially outside the wafer chuck.

Page 3 of the Final Office Action argues that “Getchel expressly discloses in the same figures [9A and 11A] said annular tube 580 is coupled to an outer edge of said wafer chuck 533.” Respectfully, that conclusory argument doesn’t establish a *prima facie* case since it doesn’t even identify that Getchel describes such an expandable annular tube. Moreover, that conclusory argument fails to establish a proper *prima facie* case that the cited portions of Getchel teach or inherently disclose an expandable annular tube located substantially outside the wafer chuck. It presents no external evidence, no basis and no technical reasoning as to the correctness of that conclusion.

For at least the foregoing reasons, Applicant believes that claim 12 is patentable over Getchel because it is not anticipated by Getchel. Dependent claims 24-30 are patentable for at least the reasons for which the claim 12 on which they depend is patentable, and further in view of their own respective features. Applicant respectfully request that claims 12 and 24-30 be passed to allowance.

#### ***Rejections under 35 U.S.C. § 103***

Claim 25 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Getchel. Applicant respectfully traverses this rejection.

Claim 25 depends from claim 12 and therefore is allowable over the cited portions of Getchel for the reasons noted above with respect to claim 12, as well as for the features it recites individually. For at least these reasons, the Applicant respectfully requests that the rejection of claim 25 should be reconsidered and withdrawn.

***New Claims 30-38***

New claims 30-38 have been added. These claims are supported by the Specification at least, e.g., in Figures 1, 3A and 3B, as well as paragraphs [0007], [0008], [0036], [0037] and [0045]. Also, independent claim 31 contains similar features to claim 12. For reasons similar to those provided with respect to independent claim 12, at least these features are not disclosed by the cited art. Applicant respectfully requests that claims 30-38 be passed to allowance.

***Conclusion***

All of the stated grounds of objection and rejection have been properly traversed, accommodated, or rendered moot. Applicant therefore respectfully requests that the Examiner reconsider all presently outstanding objections and rejections and that they be withdrawn. Applicant believes that a full and complete reply has been made to the outstanding Office Action and, as such, the present application is in condition for allowance. If the Examiner believes, for any reason, that personal communication will expedite prosecution of this application, the Examiner is invited to telephone the undersigned at the number provided.

Prompt and favorable consideration of this Amendment and Reply is respectfully requested.

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Respectfully submitted,



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